

TG, total cholesterol CHOL, LDL-CHOL) and blood pressure (BP) in both genders is well known. Some authors (see Sinalko 2004) even documented a constant, progressive increase of BL and BP, proportional to IR-HOMA values.

**Method:** 288 patients with IR-HOMA >2.5 (F 160, M 128), out of 683 overweight/obese ones, aged 9–14 years (average age = 11.09 (SD 2.62) years) were divided into seven IR-HOMA and one unit stepped groups. Every group's BL and BP were confronted with the groups around and with the opposite gender's corresponding group. Statistical analysis: Student's *t* test and parametric/non-parametric correlation tests.

**Results:** In both genders TG decrease ( $P < 0.05$ ) in IR-HOMA groups 1–3, then increase ( $P < 0.05$ ); F/M CHOL increases only in groups 6 and 7 ( $P < 0.05$ ). Among F,

LDL-CHOL ( $P < 0.05$ ) and BP ( $P < 0.01$ ) also increase in groups 6 and 7, while among M, LDL-CHOL is increased only in some IR-HOMA groups (1, 3, 6) and BP increases in group 5 (all  $P < 0.05$ ). Pairing opposite gender groups, BL and BP differences are significant in single groups, not at large. Parametric/non-parametric correlations were non-significant.

**Conclusions:** Notwithstanding our large data allow a quite accurate comparison of metabolic parameters, a progressive, much less constant, increase of any BL or BP, proportional to IR-HOMA increase, could not be demonstrated. Our contribution outlines once more that BL, BP and IR-HOMA are undoubtedly bound, but more factors that IR alone (like genetics, overweight degree and hyperhomocysteinemia) presumably influence this link.

doi:10.1017/S1368980012002054

## 31 – C-reactive protein: a marker of adiposity or cardiometabolic comorbidities of paediatric obesity?

Andreia Teles<sup>1</sup>, Carla Rego<sup>1,2</sup>, Claudia Dias<sup>3</sup> and Joao-Tiago Guimaraes<sup>4</sup>

<sup>1</sup>Nutrition Unit, Pediatrics Department & Clinical Pathology Department, Hospital S. Joao, University of Porto, Portugal; <sup>2</sup>Pediatrics Department, University of Porto, Portugal; <sup>3</sup>Biostatistics and Medical Informatics (CINTESIS), University of Porto, Portugal; <sup>4</sup>Biochemistry Department, Faculty of Medicine, University of Porto, Portugal

**Background/aims:** Childhood obesity is a public health problem. The association between obesity and low-grade inflammation is well established. Our aim is to evaluate the association between C-reactive protein (CRP) and cardiometabolic comorbidities in paediatric obesity.

**Material and method:** Obese children/adolescents with nutritional obesity followed in our outpatient clinic ( $n = 354$ ) were included. Duration of disease (years), BMI Z-score (Center for Disease Control), percentage of fat mass (dual energy X-ray absorptiometry) and waist circumference were evaluated. Blood pressure, lipid profile and CRP were measured and homeostasis model assessment-insulin resistance (HOMA-IR) was calculated.

**Results:** The mean chronological age was 10.1 years (SD 3.2; min = 1.7; max = 16.9) with no differences between gender. Same data related to descriptive analyses can be

observed in Table 1. CRP was positive and significantly correlated with BMI Z-score ( $r = 0.271$ ;  $P < 0.001$ ), %fat mass ( $r = 0.366$ ;  $P < 0.001$ ) and waist circumference ( $r = 0.198$ ;  $P < 0.001$ ). A strong positive correlation was observed between CRP and fat mass, even for short duration of disease (<2 years:  $r = 0.731$ ;  $P < 0.001$ ). No correlations were observed between CRP and lipid profile variables (total, HDL- and LDL-cholesterol, Apo lipoproteins A1 and B and triglycerides), systolic and diastolic blood pressure and HOMA-IR, independently of duration of disease.

**Conclusions:** Magnitude of obesity and adiposity as also intraabdominal fat deposition are predictors of early expression of low-grade inflammation. CRP seems not to be a sensitive/early marker of cardiometabolic comorbidity of paediatric obesity.

	Total (n 354)		Females (n 182)		Males (n 172)		P
	Mean	SD	Mean	SD	Mean	SD	
BMI Z-score	4.1	1.7	4.0	1.7	4.2	1.8	0.465
Waist (%90th Pc)	117.7	12.4	118.2	15.9	116.4	11.4	0.076
%Fat mass – (DXA)	45.8	6.1	47.2	5.7	44.3	6.2	0.002
CRP	0.31	0.4	0.32	0.4	0.31	0.4	0.581

CRP, C-reactive protein.